Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	10/732,746	CALLENDER, ROBIN LYNN	
	Examiner	Art Unit	
	KimbleAnn Verdi	2194	

All Participants:

(1) *KimbleAnn Verdi*.

(2) *Himanshu S. Amin*.

Status of Application: *now Allowed*

(3) _____.

(4) _____.

Date of Interview: *6 February 2008*

Time: *3:30*

Type of Interview:

☒ Telephonic
☐ Video Conference
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☒ No
If Yes, provide a brief description:

Part I.

Rejection(s) discussed:
n/a

Claims discussed:
1-9, 11-13, 15-25, 27-29

Prior art documents discussed:
n/a

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:
Applicant agreed to ammend the claims 1-9, 11-13, 15-25, 27-29 as presented in the examiner's amendment. Applicant authorized the ammendment to be made in an Examiner's Ammendment.

Part III.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.
☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

(Applicant/Applicant's Representative Signature – if appropriate)

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	10/732,746	CALLENDER, ROBIN LYNN	
	Examiner	Art Unit	
	KimbleAnn Verdi	2194	

All Participants: **Status of Application:** _____

(1) *KimbleAnn Verdi*. (3) _____.

(2) *DavidGrillo*. (4) _____.

Date of Interview: *11 February 2008* **Time:** *10:00*

Type of Interview:
☒ Telephonic
☐ Video Conference
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☒ No
If Yes, provide a brief description:

Part I.

Rejection(s) discussed:
n/a

Claims discussed:
1,21,27

Prior art documents discussed:
n/a

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:
Applicant agreed to ammend the claims 1, 21, and 27 as presented in the examiner's supplemental amendment. Applicant authorized the supplemental ammendment to be made in an Examiner's Ammendment.

Part III.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.
☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

(Applicant/Applicant's Representative Signature – if appropriate)

YCV

PATENT MS304254.01/MSFTP500US

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being faxed to 571-270-2654 on the date shown below to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Date: 2/8/08 Jessica Sexton

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	
Applicant(s): Robin Lynn Callender	Examiner: Kimbleann C. Verdi
Serial No: 10/732,746	Art Unit: 2194
Filing Date: December 10, 2003	

Title: DRIVER-SPECIFIC CONTEXT FOR KERNEL-MODE SHIMMING

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

AMENDMENT

Dear Sir:

Favorable reconsideration of the above-identified patent application is respectfully requested in view of the amendments and comments below.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for kernel-mode shimming comprising:

a processing unit;

a memory;

a plurality of driver components;

a common shim component that provides added functionality to the plurality of driver components; ~~and~~

a context component associated with each driver component that retrieves and maintains driver context information;

a thunk component that replaces at least one address associated with a kernel-mode service in a driver component's import address table with the address of the context component so as to redirect flow of execution from the kernel-mode service to the context component, wherein the thunk component links the context component to the common shim component; and

a diagnostic component that can engage in a probabilistic analysis based on ~~the~~ cost of making an incorrect diagnosis and~~/or~~ selecting ~~the~~ a wrong shim weighed against ~~the~~ benefit of correction.

2. (Original) The system of claim 1, wherein driver context information includes a driver's linkage configuration.

3. (Currently Amended) The system of claim 2, wherein the context component comprises a hook component that retrieves an address associated with a kernel-mode service from a the driver component's import address table.

4. (Original) The system of claim 3, wherein the hook component determines the address of the context component.

5-6. (Cancelled)

7. (Currently Amended) The system of claim ~~6~~ 1, wherein the thunk component provides the common shim component with context information regarding the kernel-mode service replaced by the context component.

8. (Currently Amended) The system of claim 7, wherein the common shim component provides a link to the kernel-mode service to direct ~~the~~ flow of execution from the shim component to the service.

9. (Currently Amended) The system of claim 1, wherein the added functionality provided by the common shim component includes compensating for a driver fault.

10. (Cancelled)

11. (Currently Amended) A system for shimming kernel-mode drivers comprising:

a processing unit;

a memory;

a driver loader component that loads drivers and generates a notification signal to indicate that a particular driver has been loaded;

a shim database that stores shim components, identify drivers to be shimmed, and associates one or more shim components with drivers to be shimmed; ~~and~~

a shim engine component that receives a notification signal from the driver loader component, queries the shim database to determine if the particular loaded driver needs to be shimmed, and loads shim components associated with the driver, wherein the shim engine generates a context component associated with a particular loaded driver, the context component comprising:

a data structure identifying a kernel-mode procedure utilized by the loaded driver; and

a thunk component for linking the loaded driver to the context component and the context component to a shim component; and

a diagnostic component for determining ~~the~~ cause of a system problem, instability or inefficiency and initiating corrective action.

12. (Original) The system of claim 11, wherein the shim engine is kernel-mode service.

13-14. (Cancelled)

15. (Previously Presented) The system of claim 11, wherein the corrective action includes locating and applying one or more shim components stored in the shim database to a driver.

16. (Previously Presented) The system of claim 11, wherein the corrective action includes notifying a user.

17. (Previously Presented) The system of claim 11, further comprising an interface component to facilitate development and deployment of a remedial shim component.

18. (Original) The system of claim 17, wherein the interface component includes a shim wizard that navigates a user through a series of steps to develop a shim component or apply a previously developed shim component to a driver.

19. (Currently Amended) A system for shimming kernel-mode drivers comprising:

a processing unit;

a memory;

a multitude of driver components;

a shim component common to the multitude of driver components;

a means for providing driver unique context data to the shim component such that a shim component can identify its caller in an overall driver linkage configuration;

a thunk component that replaces at least one address associated with a kernel-mode service in a driver component's import address table with the address of the means for providing driver unique context data so as to redirect flow of execution from the kernel-mode service to the means for providing driver unique context data, wherein the thunk component links the means for providing driver unique context data to the common shim component; and

a diagnostic component that can engage in a probabilistic analysis based on ~~the~~ cost of making an incorrect diagnosis and/~~or~~ selecting ~~the~~ a wrong shim weighed against ~~the~~ benefit of correction.

20. (Currently Amended) The system of claim 19, wherein the context data includes information regarding a kernel-mode procedure utilized by ~~the~~ a driver component.

21. (Currently Amended) A method for shimming a kernel-mode driver comprising:

generating a shim component common to several drivers;

generating driver unique context data associated with each driver to be shimmed;

replacing at least one address associated with a kernel-mode service in a driver component's import address table with another address so as to redirect flow of execution from the kernel-mode service, wherein a thunk component replaces the at least one address and links the context component to the common shim component; and

providing the driver unique context data to the shim component such that the shim component can determine its caller in an overall driver linkage configuration, and engaging in a probabilistic analysis based on ~~the~~ cost of making an incorrect diagnosis and/~~or~~ selecting ~~the~~ a wrong shim weighed against ~~the~~ benefit of correction.

22. (Original) The method of claim 19, wherein the caller is a driver.

23. (Original) The method of claim 21, wherein providing context data to the shim component includes passing the context data *via* a procedure or method parameter.

24. (Currently Amended) The method of claim 20, wherein providing context data to the shim component includes loading the driver unique context data into memory.

25. (Currently Amended) The method of claim 20, further comprising storing the shim component and driver unique context data in a shim database in a manner that preserves ~~the~~ association between a shim component, context data, and a driver.

26. (Cancelled)

27. (Currently Amended) A method for modifying kernel-mode drivers calls comprising:

receiving a signal indicating that a driver has been loaded;

querying a shim database to determine if the loaded driver has shim components associated therewith;

loading any shim components associated with the loaded driver;

initializing a unique context for the loaded driver;

replacing at least one address associated with a kernel-mode service in a driver component import address table with another address so as to redirect flow of execution from the kernel-mode service, wherein a thunk component replaces the at least one address and links the context component to the common shim component; and

redirecting the loaded driver to ~~the~~ a shim component, wherein the unique context identifies the loaded driver to the shim component, and engaging in a probabilistic analysis based on ~~the~~ cost of making an incorrect diagnosis and~~/or~~ selecting ~~the~~ a wrong shim weighed against ~~the~~ benefit of correction.

28. (Currently Amended) The method of claim 27, wherein redirecting the loaded driver to the shim component comprises replacing a driver import address table entry specifying a kernel-mode procedure to be imported with a pointer to the shim component.

29. (Original) The method of claim 28, further comprising calling the kernel-mode procedure replaced by the pointer to the shim component from the shim component.

30. (Cancelled)

REMARKS

Claims 1-4, 7-9, 11, 12, 15-25, and 27- 29 are currently pending in the subject application and are presently under consideration. Claims 1, 3, 7-9, 11, 19-21, 24, 25, 27, and 28 have been amended as shown on pp. 2-7 of this Amendment. Claim 5, 6, 10, 13, 14, 26, and 30 are cancelled.

Applicant's representative thanks Examiner Verdi for the courtesies extended during the telephonic interview conducted on February 6, 2008 where the herein amendments were discussed in detail, and agreement was reached that these amendments would place the application in condition for allowance.

Applicant's representative authorizes the Examiner to enter such amendments *via* Examiner's amendment in order to expedite allowance of the application.

It was also noted during the interview that Fig. 12 is intended to represent one particular architecture for implementing at least one claimed embodiment.

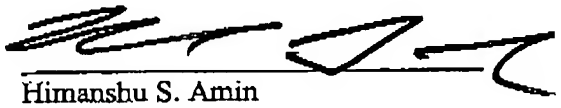
The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP



Himanshu S. Amin
Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731

PATENT **MS304254.01/MSFTP500US**

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being faxed to 571-270-2654 on the date shown below to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Date: 2/11/08 Casey L. Martin

Casey Martin

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:			
Applicant(s):	Robin Lynn Callender	Examiner:	Kimbleann C. Verdi
Serial No:	10/732,746	Art Unit:	2194
Filing Date:	December 10, 2003		

Title: DRIVER-SPECIFIC CONTEXT FOR KERNEL-MODE SHIMMING

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

SUPPLEMENTAL AMENDMENT

Dear Sir:

Favorable reconsideration of the above-identified patent application is respectfully requested in view of the amendments and comments set forth hereinafter.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for kernel-mode shimming comprising:

a processing unit;

a memory;

a plurality of driver components;

a common shim component that provides added functionality to the plurality of driver components;

a context component associated with each driver component that retrieves and maintains driver context information;

a thunk component that replaces at least one address associated with a kernel-mode service in a driver component's import address table with ~~the~~ an address of the context component so as to redirect flow of execution from the kernel-mode service to the context component, wherein the thunk component links the context component to the common shim component; and

a diagnostic component that can engage in a probabilistic analysis based on cost of making an incorrect diagnosis and selecting a wrong shim weighed against benefit of correction.

2. (Original) The system of claim 1, wherein driver context information includes a driver's linkage configuration.

3. (Previously Presented) The system of claim 2, wherein the context component comprises a hook component that retrieves an address associated with a kernel-mode service from the driver component's import address table.

4. (Original) The system of claim 3, wherein the hook component determines the address of the context component.

5-6. (Cancelled)

7. (Previously Presented) The system of claim 1, wherein the thunk component provides the common shim component with context information regarding the kernel-mode service replaced by the context component.

8. (Previously Presented) The system of claim 7, wherein the common shim component provides a link to the kernel-mode service to direct flow of execution from the shim component to the service.

9. (Previously Presented) The system of claim 1, wherein the added functionality provided by the common shim component includes compensating for a driver fault.

10. (Cancelled)

11. (Previously Presented) A system for shimming kernel-mode drivers comprising:

a processing unit;

a memory;

a driver loader component that loads drivers and generates a notification signal to indicate that a particular driver has been loaded;

a shim database that stores shim components, identify drivers to be shimmed, and associates one or more shim components with drivers to be shimmed;

a shim engine component that receives a notification signal from the driver loader component, queries the shim database to determine if the particular loaded driver needs to be shimmed, and loads shim components associated with the driver, wherein the shim engine generates a context component associated with a particular loaded driver, the context component comprising:

a data structure identifying a kernel-mode procedure utilized by the loaded driver; and

a thunk component for linking the loaded driver to the context component and the context component to a shim component; and

a diagnostic component for determining cause of a system problem, instability or inefficiency and initiating corrective action.

12. (Original) The system of claim 11, wherein the shim engine is kernel-mode service.

13-14. (Cancelled)

15. (Previously Presented) The system of claim 11, wherein the corrective action includes locating and applying one or more shim components stored in the shim database to a driver.

16. (Previously Presented) The system of claim 11, wherein the corrective action includes notifying a user.

17. (Previously Presented) The system of claim 11, further comprising an interface component to facilitate development and deployment of a remedial shim component.

18. (Original) The system of claim 17, wherein the interface component includes a shim wizard that navigates a user through a series of steps to develop a shim component or apply a previously developed shim component to a driver.

19. (Previously Presented) A system for shimming kernel-mode drivers comprising:

a processing unit;

a memory;

a multitude of driver components;

a shim component common to the multitude of driver components;

a means for providing driver unique context data to the shim component such that a shim component can identify its caller in an overall driver linkage configuration;

a thunk component that replaces at least one address associated with a kernel-mode service in a driver component's import address table with the address of the means for providing driver unique context data so as to redirect flow of execution from the kernel-mode service to the means for providing driver unique context data, wherein the thunk component links the means for providing driver unique context data to the common shim component; and

a diagnostic component that can engage in a probabilistic analysis based on cost of making an incorrect diagnosis and selecting a wrong shim weighed against benefit of correction.

20. (Previously Presented) The system of claim 19, wherein the context data includes information regarding a kernel-mode procedure utilized by a driver component.

21. (Currently Amended) A method for shimming a kernel-mode driver comprising:

generating a shim component common to several drivers;

generating driver unique context data associated with each driver to be shimmed;

replacing at least one address associated with a kernel-mode service in a driver component's import address table with ~~another~~ an address of a context component so as to redirect flow of execution from the kernel-mode service, wherein a thunk component replaces the at least one address and links the context component to the ~~common~~ shim component; and

providing the driver unique context data to the shim component such that the shim component can determine its caller in an overall driver linkage configuration, and

engaging in a probabilistic analysis based on cost of making an incorrect diagnosis and selecting a wrong shim weighed against benefit of correction.

22. (Original) The method of claim 19, wherein the caller is a driver.

23. (Original) The method of claim 21, wherein providing context data to the shim component includes passing the context data *via* a procedure or method parameter.

24. (Previously Presented) The method of claim 20, wherein providing context data to the shim component includes loading the driver unique context data into memory.

25. (Previously Presented) The method of claim 20, further comprising storing the shim component and driver unique context data in a shim database in a manner that preserves association between a shim component, context data, and a driver.

26. (Cancelled)

27. (Currently Amended) A method for modifying kernel-mode drivers calls comprising:

receiving a signal indicating that a driver has been loaded;

querying a shim database to determine if the loaded driver has shim components associated therewith;

loading any shim components associated with the loaded driver;

initializing a unique context for the loaded driver;

replacing at least one address associated with a kernel-mode service in a driver ~~component~~ component's import address table with ~~another~~ an address of a context component so as to redirect flow of execution from the kernel-mode service, wherein a thunk component replaces the at least one address and links the context component to ~~the common~~ a shim component; and

redirecting the loaded driver to the shim component, wherein the unique context identifies the loaded driver to the shim component, and engaging in a probabilistic

analysis based on cost of making an incorrect diagnosis and selecting a wrong shim weighed against benefit of correction.

28. (Previously Presented) The method of claim 27, wherein redirecting the loaded driver to the shim component comprises replacing a driver import address table entry specifying a kernel-mode procedure to be imported with a pointer to the shim component.

29. (Original) The method of claim 28, further comprising calling the kernel-mode procedure replaced by the pointer to the shim component from the shim component.

30. (Cancelled)

REMARKS

Claims 1-4, 7-9, 11, 12, 15-25, and 27- 29 are currently pending in the subject application and are presently under consideration. Claims 1, 21 and 27 have been amended as shown on pp. 2-7 of this Supplemental Amendment.

Applicant's representative thanks Examiner Verdi for the courtesies extended during the telephonic interview conducted on February 11, 2008 where a few antecedent basis issues were identified and herein resolved by the subject amendments. Applicant's representative authorizes the Examiner to enter such amendments *via* Examiner's amendment in order to expedite allowance of the application.

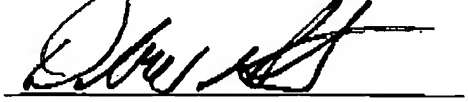
The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP



David Grillo
Reg. No. 52,970

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731